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Serials

THE SMELT, CAPELIN AND SILVERSIDE

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The smelt, *Osmerus mordax* (Mitchill), the capelin, *Mallotus villosus* (Muller) and the silverside, *Menidia notata* (Mitchill) are three small, slender, silvery fishes which occur in our Canadian Atlantic waters. They are three distinct marine species yet look so much alike that some fishermen and many of the general public confuse them. Even in the adult stage smelt and capelin may often be confused and the silverside, particularly in the young stages, has frequently been mistaken for a young smelt or a capelin.

This circular has been prepared to show how these fishes can easily be distinguished by means of their different external features. A short account of the distribution, life history and economic importance of each fish is included.

SMELT, CAPELIN OR SILVERSIDE

The **SMELT** has a large mouth gaping to the back edge of the eye. The tongue has large fang-like teeth. There is a fleshy fin on the back behind one large soft fin. Scales are fairly large.

The **CAPELIN** has a large mouth gaping to the mid-line of the eye. The tongue has no fang-like teeth. There is a fleshy fin on the back behind one large soft fin. Scales are very small.

The **SILVERSIDE** has a small mouth gaping only half-way to the eye. The tongue has no fang-like teeth. There is no fleshy fin on the back which has instead a spiny fin and a large soft fin. Scales are quite large. Running along each side is a silver band with a distinct black line on its upper edge.

THE SMELT

The smelt is very much like the salmon in structure but is rarely more than nine inches in length. Ranging along the Atlantic coast of North America from Labrador to New Jersey, it is most abundant in the Gulf of St. Lawrence and the waters of the outer coast of Nova Scotia and the Bay of Fundy. It is more widely distributed than the capelin or silverside. Some smelt live all year round in fresh-water lakes as far west as Lake Michigan where they provide an important commercial fishery.

Smelt move into estuaries from the open sea each autumn and remain there during the winter. After the spring "break-up" they run into the coastal streams and spawn in the fresh and brackish water.

The smelt is highly prized as a food fish either in the frozen or fresh state. Catches of commercial size are made in many maritime centres. However, the estuary of the Miramichi River in north-eastern New Brunswick provides one-third of the annual Canadian catch which has an average value of six hundred and fifty thousand dollars. The commercial fishery in the Miramichi area is carried on mainly in the winter by means of trap nets set under the ice. In other districts some fishing is also done with gill nets both in open water and through the ice.

In Newfoundland and Labrador the smelt is of little commercial importance. The small fishery has been confined to the Port au Port Bay and St. Georges Bay areas of the south-west coast of Newfoundland. Prior to 1939 there was a small commercial fishery at the northern tip of Newfoundland.



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**S M E L T**

Illustrations from H. L.

(Osmerus mordax)

OTHER COMMON NAMES --- None.

CHARACTERISTICS --- 4 to 9 inches long in commercial catch with occasional fish 12 inches. Translucent olive-green on back. Paler on sides. Belly silvery. Mouth large, opening to behind mid-line of eye. Jaws of equal length. Fang-like teeth on tip of tongue. Scales fairly large; smooth in female, rough along sides of male at spawning time. Large soft fin on middle of back. Small fleshy fin in front of tail. Thin line extends along sides  $1/3$  way from head towards tail.

DISTRIBUTION --- Labrador to New Jersey. Abundant in Gulf of St. Lawrence and off New Brunswick, Prince Edward Island and Nova Scotia. Live in bays and harbours in open water rather than on bottom. Some lakes contain a "land-locked" variety.

SPAWNING --- Marine variety runs into coastal streams after spring "break-up" and spawns in fresh and brackish waters.

FISHING --- Bays, estuaries and harbours during winter months - trap nets set under ice. Some gill netting and hook and line. Important commercially as food fish.

**C A P E L I N**

(Mallotus villosus)

OTHER COMMON NAMES --- None.

CHARACTERISTICS --- 4 to 12 inches in length with males averaging about 7 inches and females  $6\frac{1}{2}$  inches. Translucent olive-green on back. Lower part of sides silvery. Belly white. Mouth large, opening to front half of eyes. Lower jaw protrudes. No fang-like teeth on tongue. Scales minute with two rows of ridges along the sides of males at spawning time. Large soft fin on middle of back. Small fleshy fin in front of tail. Thin line extends along sides from head to tail.

DISTRIBUTION --- Arctic seas south along Atlantic coast of Canada to Gulf of Maine. Particularly abundant off Labrador, and north, east and north-eastern half of south coasts of Newfoundland. Fairly numerous around Gaspe. Occasionally seen off New Brunswick, Prince Edward Island and Nova Scotia. Lives in open seas except for 1 to 2 months along shore in early summer.

SPAWNING --- June and July in Newfoundland along sand and gravel beaches with the characteristic "rolling" habit.

FISHING --- Cast nets, seines and dip nets during early summer when they spawn along the shore. Main food of cod. Used as fertilizer, bait, dog-food, meal and for local human consumption.

**S I L V E R S I D E**

(Menidia notata)

OTHER COMMON NAMES --- Often wrongly called "capelin" in some areas.

CHARACTERISTICS --- 3 to 5 inches but not more than 6 inches long. Translucent bottle-green on back and upper sides. Brown speckles on latter. Silvery band along middle of side with upper edge outlined by a fine black line. Belly white. Mouth small, gaping half-way back from snout to eye. Jaws of equal length. No teeth ordinarily visible. Scales large. Large soft fin a little behind middle of back with small spiny fin in front of it. Thin line extends along sides from head to tail.

DISTRIBUTION --- Gulf of St. Lawrence to Delaware Bay. Brackish and salt waters of bays and harbours. Sandy or gravelly shores close to water's edge. Rarely deeper than 1 to 2 fathoms.

SPAWNING --- Early summer in brackish or salt water on shallow sandy shores near low-tide level.

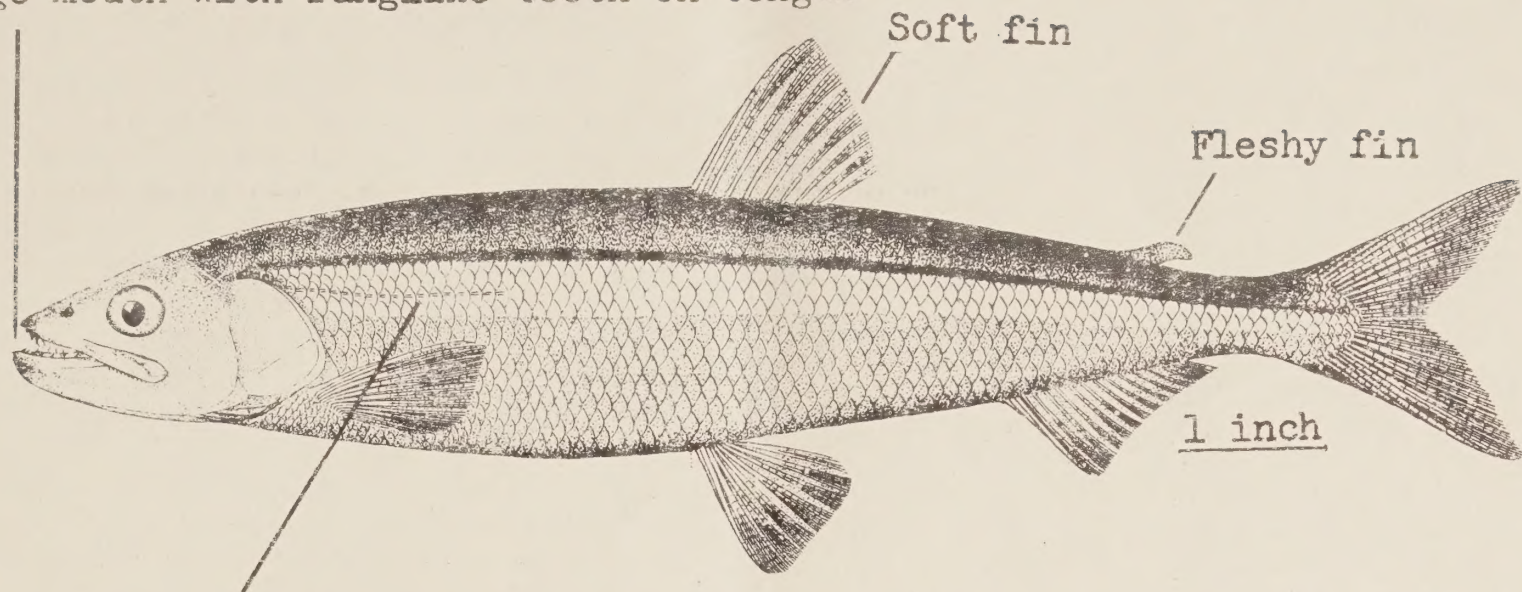
FISHING --- Of limited commercial value due to small size. Some seined and used for fox-food on Prince Edward Island. Some have been canned.



## SMELT

odd, U. S. National Museum

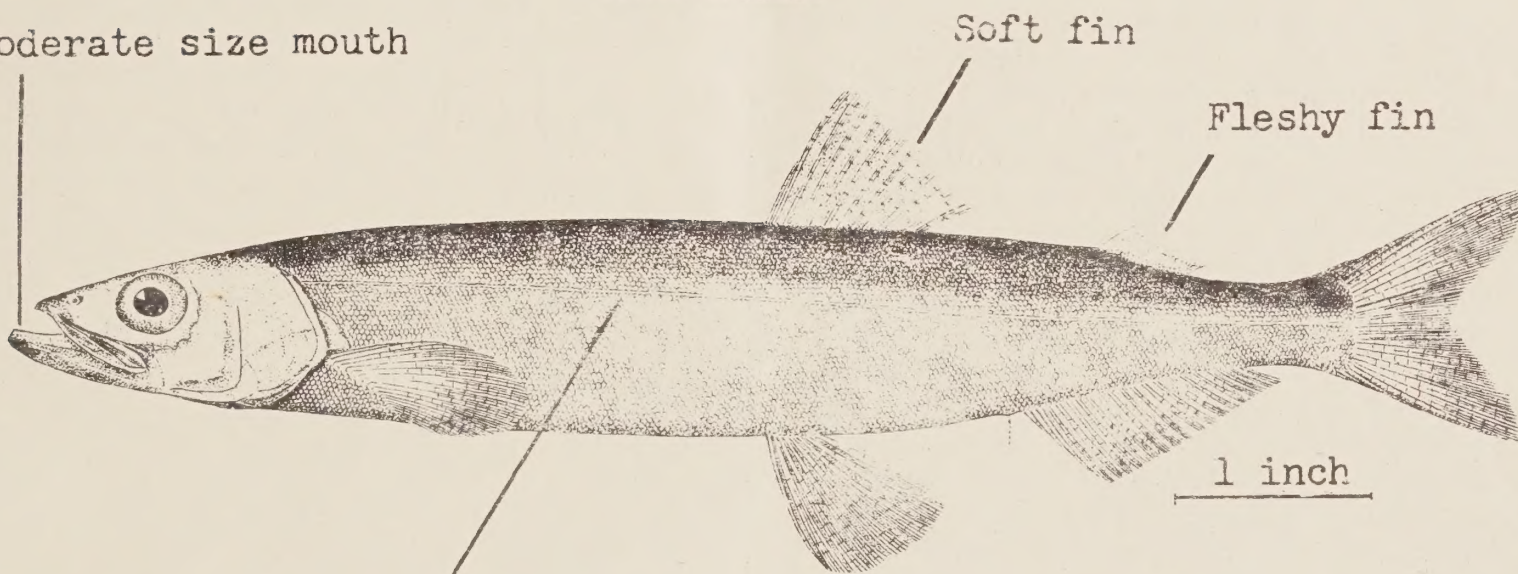
Large mouth with fanglike teeth on tongue



Thin line one-third way from head to tail

## CAPELIN

Moderate size mouth

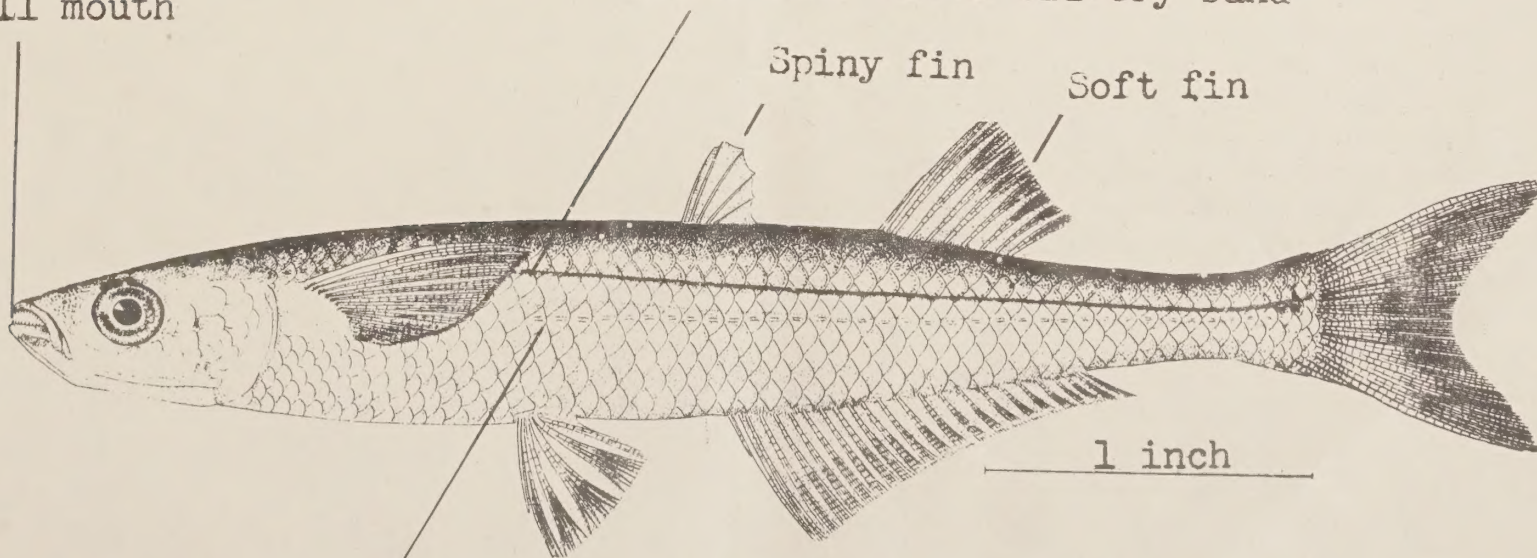


Thin line from head to tail

## SILVERSIDE

Small mouth

Black line above silvery band



Thin line from head to tail



## THE CAPELIN

The capelin is a close relative of the smelt and indeed belongs in the same family of fish. It occurs in all Arctic seas and southward along the Atlantic coast of North America, occasionally as far as the Gulf of Maine. Off Labrador and Newfoundland, especially the north and east coasts and the easterly half of the south coast, the capelin is extremely abundant. Around Gaspe it is fairly numerous, but is only occasionally seen in the waters off New Brunswick, Prince Edward Island and Nova Scotia.

The capelin lives in the open northern seas except for one or two months in early summer when it spawns in vast numbers along the shore. The eggs are deposited in great quantities on the sands along the beaches about Newfoundland in June. Capelin are perhaps best known for their characteristic "rolling" during the spawning act when whole schools allow themselves to be tossed by the breakers upon the shingle or gravel beaches. Here the eggs are laid and fertilized. The adult fish are often left stranded and die.

In Newfoundland the capelin ranks next to the cod in general importance. Most forms of large fish, seas mammals and sea birds live to a large extent on capelin during a good part of the year. It is the main and almost only food of the east and south coast cod during June and July and the north and northeast Grand Bank cod from early spring to late July. In addition to this twenty-five to fifty million pounds are caught in dip nets and beach seines during the spawning season, and used annually by the Newfoundland people as fertilizer (50%), bait (30%), dried dog food (8%), while the remainder (12%) is used for local human consumption, exported in the dried state or made into meal.

The capelin is considered a very fine food fish whether dried, lightly smoked, frozen or fresh.

## THE SILVERSIDE

The silverside is often confused with the young smelt. It is distributed along the Atlantic coast of North America from the Gulf of St. Lawrence to Delaware Bay. The southern part of the Gulf of St. Lawrence is about the northern limit of the silverside's range but it is found here in surprising abundance because of the comparatively high summer water temperatures.

The silverside lives in bays and harbours, frequenting the sandy and gravelly beaches within a few yards of the water's edge, and is rarely found deeper than one or two fathoms. The fish congregate in schools in the bays and harbours where they spawn during the early summer over sandy bottom and among the water plants near the low-tide level.

The small size of the silverside has restricted its commercial value. Some have been canned on Prince Edward Island and in other parts of the Gulf, and some are used for fox food. It is not used fresh as a food to any extent but is considered very tasty.